

BioAktiv Trial

Derrel Farms
Grantham, Queensland

Latitude -27.58 South
Longitude 152.31 East
Altitude 119.38 Meters/391.68 Feet

Farm Owner - Derek Schultz
Contract Client - Rugby Farm Pty Ltd
Trial Supervisor - Dr Svetlana Ukolova
Harvest date - 26th January 2018

Task/Observations:

From a number of random corn cobs picked from the trial plots, individual weight and Brix index were measured and averaged.

Yields were taken from one hopper each of the harvested, one hectares plots (Photo 3). These provided 18 containers of corn from Bioaktiv treated and control plots. Both were assessed for the volume of packed boxes (30 corn per box) by plant packing supervisor of Rugby Farm P/L. (Photo 4)

Statistical analysis was performed to validate the obtained data of starch and sugar percentage, weight, yield, and plant health (resistance to infestation). Other observations such as vigour, weed density and the number of heliosis that affected the crops were also noted.

These areas of impact are to determine the commercial advantages of using BioAktiv.



Photo 2. Noticeable vigour and colour between BioAktiv and control trial plots.



Photo 3. Harvested corn loaded to hoppers



Photo 4. Crates sorted to be packed in boxes.

Results/Discussion

Our results showed that just one BioAktiv application at 3-4 leaf stage of sweet corn significantly increased the ability of plants to absorb nutrients from the soil as seen based on the improved yield results. Harvested hopper produced 246 boxes (7380 cobs) of BioAktiv treated corn as compared to 226 boxes (6780 cobs) from the same plot area which correlates to 8.85% increase in yield.

The BioAktiv treated cobs have also achieved the average weight of 226.07 grams per cob from 67 random corn selections, whereas the Control cobs (no BioAktiv application) only scored the average weight of 202.6 grams per cob from the same number of corn cobs (Table1 Field Chart & Graph1 Results). Overall, 11.6% weight gain was obtained after just one BioAktiv application.

Consistent with our improved yields and weight results, the sugar content test has also shown increased Brix reading for BioAktiv treated cobs. BioAktiv plants achieved 9.8% higher Brix reading as compared to control plants (no BioAktiv application). This data is consistent with our understanding that Bioaktiv facilitates the significant increase in photosynthetic activity of treated sweet corn which produces more vigorous and stronger plants as a result.

Further analysis of the selected harvested corn cobs has additionally showed improved vitality and stronger immunity of BioAktiv treated sweet corn as was observed by counting the number of cobs affected by heliosis disease in both BioAktiv treated and non- treated plots.

The obtained data showed a significant disease reduction of 34.8% (Photo 5) for BioAktiv treated plants compared to non-treated ones.

Conclusions

Our results from the conducted trial have showed that BioAktiv significantly improves yields by promoting healthier plants with increased photosynthetic activity and stronger immunity. Treated plants show up to 8.8% yield increase with higher weight and sugar content while also having better ability to cope with heliosis.

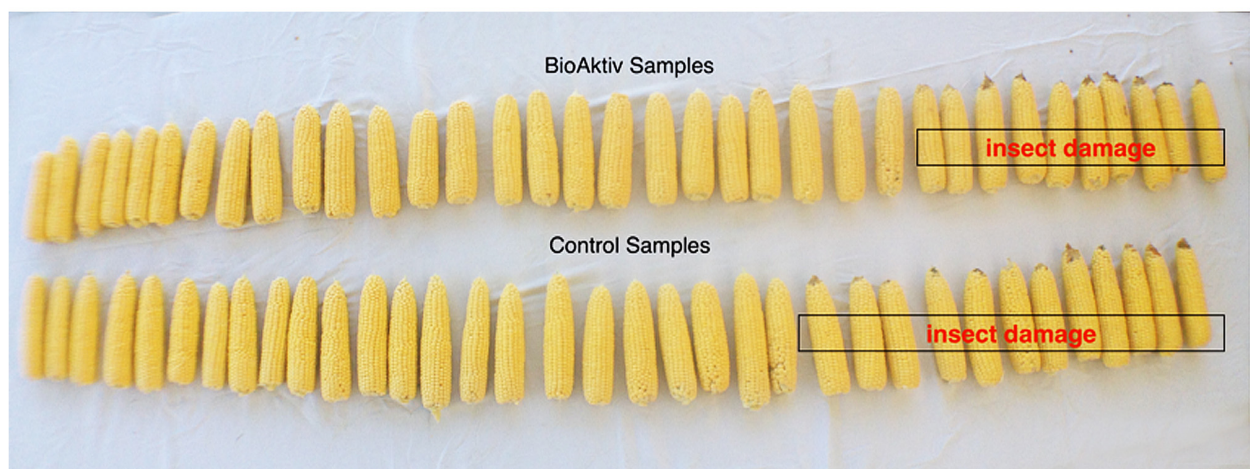


Photo 5. Sample of selected corn cobs which were observed for insect damage

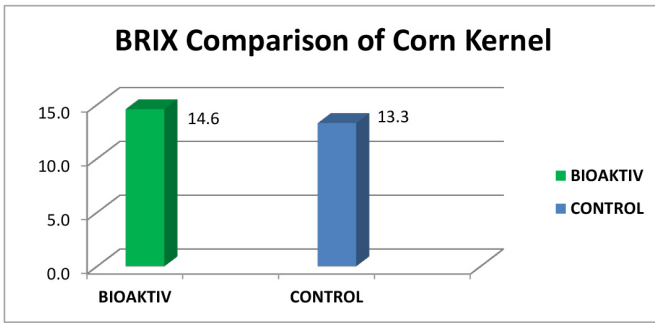
Brix Reading Chart

Field Chart

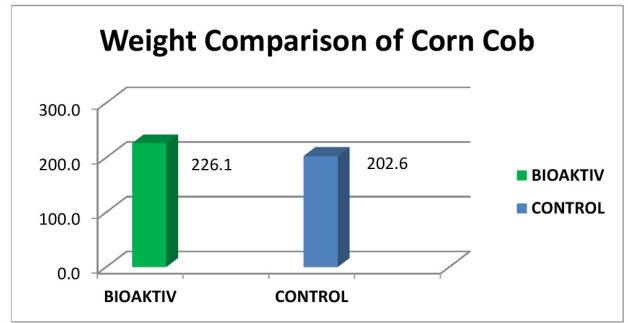
Crop: SWEET CORN (variety : Garrison)

Date	Time of Day	Weather	Grower name	Field No.	BioAktiv (BA)	BRIX		Weight per Cob (gms)	Insect damage	Control ©	BRIX		Weight per Cob (gms)	Insect damage	
						Leaf	Grain				Leaf	Grain			
16/01/18	1:00pm	sunny/fine	Derrel Farms, Grantham		BA		14.8	219			C		15.0	195	
					BA		14.0	233			C		14.2	205	1
					BA	14.2	14.8	181	1	C	10.2	13.2	188	1	
					BA		14.4	232	1	C		16.2	204		
					BA		13.8	217		C		16.4	226		
					BA		14.0	216		C		14.2	180		
					BA		13.2	216		C		12.0	204		
					BA		13.8	218		C		13.8	215		
					BA		14.4	251		C		10.4	190		
					BA		14.4	233	1	C		16.0	200		
					BA		14.4	228		C		13.0	184	1	
					BA		14.4	228	1	C		12.4	231		
					BA		15.2	241		C		10.6	197	1	
					BA		15.0	251		C		11.2	214	1	
					BA		16.0	219		C		12.8	194	1	
					BA		15.8	208		C		13.0	228		
					BA		15.6	230		C		14.4	226		
					BA		15.0	233		C		12.8	220		
					BA		15.2	220		C		14.2	227	1	
					16/01/18	3:00am	cool	Derrel Farms, Grantham		BA		15.4	210		
BA		14.8	224								C		15.0	233	
BA		14.0	243								C		14.2	178	
BA		14.8	220								C		13.2	207	
BA	13.4	14.4	189							C	12.2	16.2	242		
BA		13.8	195							C		16.4	220		
BA		14.0	206							C		14.2	195		
BA		13.2	203							C		12.0	163		
BA		13.8	228							C		13.8	202		
BA		14.4	231							C		10.4	157		
BA		14.4	223							C		16.0	203		
BA		14.4	244							C		13.0	198		
BA		14.4	223							C		12.4	217		
BA		15.2	215							C		10.6	189		
BA		15.0	221							C		11.2	205		
BA		16.0	211							C		12.8	162		
BA		15.8	228							C		13.0	185		
BA		15.6	242							C		14.4	207		
BA		15.0	252							C		12.8	195		
BA		15.2	238							C		14.2	211		
BA		15.4	242							C		12.0	188		
BA		14.6	209							C		14.2	222		
BA		15.2	236							C		14.6	226		
BA	12.2	14.8	257							C	9.8	12.2	175		
BA		16.4	235							C		13.4	208	1	
BA		15.8	196							C		13.2	207	1	
BA		14.8	190	1						C		12.6	206	1	
BA		15.4	202	1						C		13.2	178	1	
BA		14.6	227	1						C		14.6	225	1	
BA		14.2	221	1						C		14.4	207	1	
BA		15.2	221	1						C		13.8	193	1	
BA		13.2	223	1						C		13.6	197	1	
BA		13.8	241	1	C		14.4	215	1						
BA		13.8	235	1	C		12.8	192	1						
BA		13.0	196	1	C		12.4	214	1						
BA		13.4	224	1	C		13.2	201	1						
BA		15.2	239		C		10.6	178							
BA		15.4	239		C		11.2	169							
BA		14.6	258		C		12.8	224							
BA		15.2	251	1	C		13.0	212	1						
BA		14.8	248		C		14.4	189							
BA		14.4	275		C		12.8	242							
BA		13.8	214		C		14.2	173	1						
BA		14.8	244		C		12.0	225							
BA		14.2	256		C		14.2	213	1						
BA		14.6	245		C		14.6	215							
BA		14.2	198		C		12.2	237							
BA		14.6	205		C		13.4	176	1						
TOTALS						39.8	981.2	15,147	15		32.2	893.6	13,576	23	

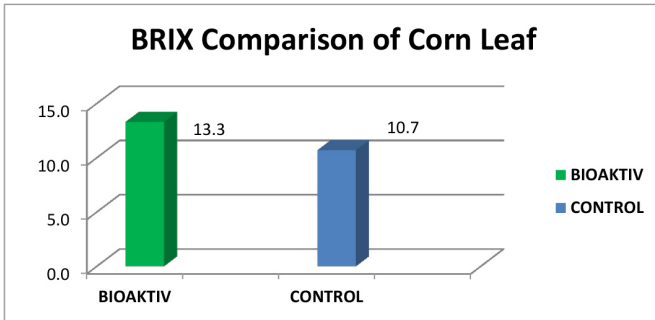
Graph 1 Results



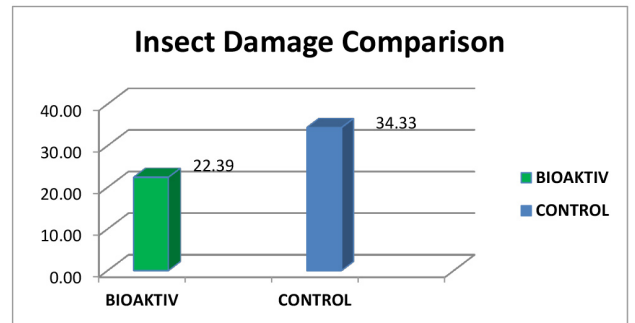
BRIX - corn kernel reading average (starch content)
Percentage difference (+/-) 9.8 %



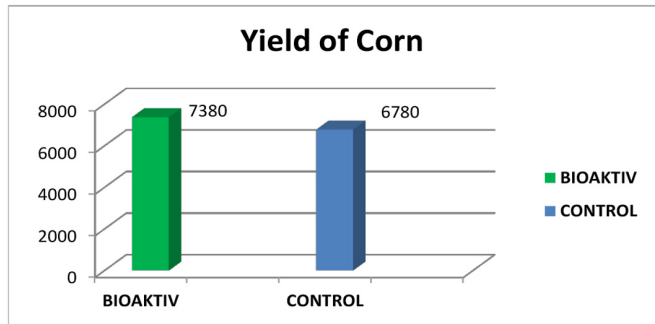
Average weight per corn cob (grams)
Percentage difference (+/-) 11.6 %



BRIX - leaf reading average (starch content)
Percentage difference (+/-) 24.3 %



Insect damage (percentage)
Percentage difference (+/-) -34.8 %



Yield - Count per truck load (no. of corn)
Percentage difference (+/-) 8.9 %